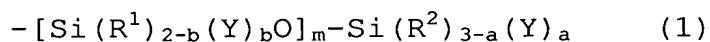


CLAIMS

1. A curable composition comprising, as an essential component, (I) a vinyl polymer, which has at least one crosslinkable silyl group at the terminus and a monomer containing a methyl ester group as an essential constituent unit, the crosslinkable silyl group represented by general formula (1):



wherein each of  $R^1$  and  $R^2$  represents an alkyl group containing 1 to 20 carbon atoms, an aryl group containing 6 to 20 carbon atoms, an aralkyl group containing 7 to 20 carbon atoms, or a triorganosiloxy group represented by  $(R')_3\text{SiO-}$ , wherein  $R'$  represents a monovalent hydrocarbon group containing 1 to 20 carbon atoms, and three  $R'$ 's may be identical to or different from one another, and when two or more  $R^1$ 's or  $R^2$ 's exist, these may be identical to or different from one another;  $Y$  represents a hydroxyl group or a hydrolyzable group, and when two or more  $Y$ 's exist, these may be identical to or different from one another; and  $a$  represents 0, 1, 2, or 3,  $b$  represents 0, 1, or 2, and  $m$  represents an integer between 0 and 19, which satisfies  $a + mb \geq 1$ .

2. The curable composition according to claim 1, wherein the vinyl polymer (I) is a (meth)acrylic polymer.

3. The curable composition according to claim 1 or 2, wherein the monomer containing a methyl ester group which constitutes the vinyl polymer (I) is methyl acrylate.

4. The curable composition according to claim 1 or 2, wherein the monomer containing a methyl ester group which constitutes the vinyl polymer (I) is methyl methacrylate.

5. The curable composition according to any one of claims 1 to 4, wherein the vinyl polymer (I) is in a liquid state at 23°C.

6. The curable composition according to any one of claims 1 to 5, wherein the vinyl polymer (I) is synthesized by living radical polymerization.

7. The curable composition according to any one of claims 1 to 6, wherein the vinyl polymer (I) is synthesized by atom transfer radical polymerization.

8. The curable composition according to any one of claims 1 to 7, wherein the vinyl polymer (I) has a ratio of weight average molecular weight to number average molecular weight of less than 1.8, the ratio being determined by gel permeation chromatography.

9. The curable composition according to any one of claims 1 to 8, wherein the curable composition is a one-component curable composition.

10. The curable composition according to any one of claims 1 to 9, which comprises a condensation curing catalyst (II) as an essential component.

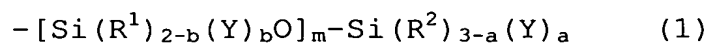
11. The curable composition according to claim 10, wherein the condensation curing catalyst (II) is a tin curing catalyst.

12. The curable composition according to any one of claims 1 to 11, which comprises an amine compound (III) as an essential component.

13. The curable composition according to claim 12, wherein the amino group contained in the amine compound (III) is a primary amine.

14. The curable composition according to claim 12 or 13, wherein the amine compound is a silane coupling agent.

15. The curable composition according to any one of claims 1 to 14, comprising a polyether polymer having at least one crosslinkable silyl group represented by the general formula (1):



wherein each of  $R^1$  and  $R^2$  represents an alkyl group containing 1 to 20 carbon atoms, an aryl group containing 6 to 20 carbon atoms, an aralkyl group containing 7 to 20 carbon atoms, or a triorganosiloxy group represented by  $(R')_3SiO-$ , wherein  $R'$  represents a monovalent hydrocarbon group containing 1 to 20 carbon atoms, and three  $R'$ 's may be identical to or different from one another, and when two or more  $R^1$ 's or  $R^2$ 's exist, these may be identical to or different from one another;  $Y$  represents a hydroxyl group or a hydrolyzable group, and when two or more  $Y$ 's exist, these may be identical to or different from one another; and  $a$  represents 0, 1, 2, or 3,  $b$  represents 0, 1, or 2, and  $m$  represents an integer between 0 and 19, which satisfies  $a + mb \geq 1$ .

16. A sealant, wherein the curable composition according to any one of claims 1 to 15 is used.

17. A liquid gasket, wherein the curable composition according to any one of claims 1 to 15 is used.

18. An adhesive, wherein the curable composition according to any one of claims 1 to 15 is used.

19. A polymer, wherein the polymer has at least one crosslinkable functional group at the terminus and also has a vinyl polymer as a main chain thereof, wherein 2% to 80%

by weight of monomers based on the total monomers constituting the main chain is methyl acrylate.

20. The polymer according to claim 19, wherein 5% to 50% by weight of monomers based on the total monomers constituting the main chain is methyl acrylate.

21. The polymer according to claim 20, wherein 5% to 20% by weight of monomers based on the total monomers constituting the main chain is methyl acrylate.

22. A polymer comprising at least one crosslinkable functional group at the terminus and also has a vinyl polymer as a main chain thereof, wherein 2% to 50% by weight of monomers based on the total monomers constituting the main chain is methyl methacrylate.

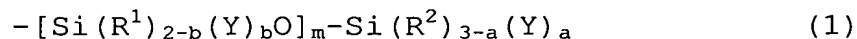
23. The polymer according to claim 22, wherein 2% to 20% by weight of monomers based on the total monomers constituting the main chain is methyl methacrylate.

24. The polymer according to any one of claims 19 to 23, wherein the vinyl polymer as a main chain is a (meth)acrylic polymer.

25. The polymer according to any one of claims 19 to 24, wherein the main chain is synthesized by living radical polymerization.

26. The polymer according to any one of claims 19 to 24, wherein the main chain is synthesized by atom transfer radical polymerization.

27. The vinyl polymer according to any one of claims 19 to 26, wherein the crosslinkable functional group is a crosslinkable silyl group represented by the general formula (1):



wherein each of  $\text{R}^1$  and  $\text{R}^2$  represents an alkyl group containing 1 to 20 carbon atoms, an aryl group containing 6 to 20 carbon atoms, an aralkyl group containing 7 to 20 carbon atoms, or a triorganosiloxy group represented by  $(\text{R}')_3\text{SiO}-$ , wherein  $\text{R}'$  represents a monovalent hydrocarbon group containing 1 to 20 carbon atoms, and three  $\text{R}'$ 's may be identical to or different from one another, and when two or more  $\text{R}^1$ 's or  $\text{R}^2$ 's exist, these may be identical to or different from one another;  $\text{Y}$  represents a hydroxyl group or a hydrolyzable group, and when two or more  $\text{Y}$ 's exist, these may be identical to or different from one another; and  $a$  represents 0, 1, 2, or 3,  $b$  represents 0, 1, or 2, and  $m$  represents an integer between 0 and 19, which satisfies  $a + mb \geq 1$ .

28. The vinyl polymer according to any one of claims 19 to 26, wherein the crosslinkable functional group is an alkenyl group.

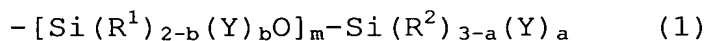
29. The vinyl polymer according to any one of claims 19 to 26, wherein the crosslinkable functional group is a (meth)acryloyl group.

30. The vinyl polymer according to claims 19 to 26, wherein the crosslinkable functional group is a hydroxyl group.

31. A curable composition comprising the polymer according to any one of claims 19 to 30 as an essential component.

32. A curable composition with improved storage stability, which comprises the following two components as essential components:

(I) a vinyl polymer having at least one crosslinkable silyl group represented by the general formula (1):



wherein each of  $\text{R}^1$  and  $\text{R}^2$  represents an alkyl group containing 1 to 20 carbon atoms, an aryl group containing 6 to 20 carbon atoms, an aralkyl group containing 7 to 20 carbon atoms, or a triorganosiloxy group represented by  $(\text{R}')_3\text{SiO}-$ , wherein  $\text{R}'$  represents a monovalent hydrocarbon group containing 1 to 20 carbon atoms, and three  $\text{R}'$ 's may be identical to or different from one another, and when two or more  $\text{R}^1$ 's or  $\text{R}^2$ 's exist, these may be identical to or different from one another;  $\text{Y}$  represents a hydroxyl group or a hydrolyzable group, and when two or more  $\text{Y}$ 's exist, these may be identical to or different from one another; and  $a$  represents 0, 1, 2, or 3,  $b$  represents 0, 1,

or 2, and m represents an integer between 0 and 19, which satisfies  $a + mb \geq 1$ ; and

a compound (II) having a methyl ester group other than the compound (I).

33. The curable composition according to claim 32, wherein the vinyl polymer is an acrylic polymer.

34. The curable composition according to claim 33, wherein the vinyl polymer is an acrylic ester polymer.

35. The curable composition according to any one of claims 32 to 34, wherein the vinyl polymer (I) is synthesized by living radical polymerization.

36. The curable composition according to any one of claims 32 to 35, wherein the vinyl polymer (I) is synthesized by atom transfer radical polymerization.

37. The curable composition according to any one of claims 32 to 36, wherein the vinyl polymer (I) has a ratio of weight average molecular weight to number average molecular weight of less than 1.8, the ratio being determined by gel permeation chromatography.



38. The curable composition according to any one of claims 32 to 37, wherein the curable composition is a one-component curable composition.

39. The curable composition according to any one of claims 32 to 38, wherein the compound (II) having a methyl ester group other than the compound (I) is not a polymer.

40. The curable composition according to any one of claims 32 to 39, wherein the carbon atom at the  $\alpha$ -position of the methyl ester group contained in the compound (II) having a methyl group other than the compound (I) is primary or secondary.

41. The curable composition according to any one of claims 32 to 38, wherein the compound (II) having a methyl ester group other than the compound (I) is selected from the group consisting of:

dimethyl malonate, dimethyl succinate, dimethyl glutarate, dimethyl adipate, dimethyl sebacate, methyl acetate, methyl propionate, methyl butyrate, methyl valerate, methyl caprylate, methyl caprate, methyl laurate, methyl myristate, methyl palmitate, methyl stearate, methyl oleate, methyl ricinoleate, and coconut fatty acid methyl ester.

42. The curable composition according to any one of claims 32 to 38, wherein the compound (II) having a methyl ester group

other than the compound (I) is a polymer containing a monomer having a methyl ester group as a constituent unit.

43. The curable composition according to claim 42, wherein the monomer having a methyl ester group is methyl acrylate.

44. The curable composition according to claim 42 or 43, wherein the compound having a methyl ester group is a copolymer containing a monomer having a methyl ester group as a constituent, and that among ester groups contained in monomers other than the monomer having a methyl ester group, those having an alkoxy group that is primary and contains 5 or more carbon atoms make up 80% or less at a molar ratio with respect to the methyl ester groups.

45. The curable composition according to claim 42 or 43, wherein the compound having a methyl ester group is a copolymer containing a monomer having a methyl ester group as a constituent, and that among ester groups contained in monomers other than the monomer having a methyl ester group, those having an alkoxy group that is primary and contains 2 to 4 carbon atoms make up 400% or less at a molar ratio with respect to the methyl ester groups.

46. The curable composition according to any one of claims 32 to 45, wherein the curable composition comprises a condensation curing catalyst (III) as an essential component.

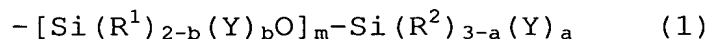
47. The curable composition according to claim 46, wherein the condensation curing catalyst (III) is a tin curing catalyst.

48. The curable composition according to any one of claims 42 to 47, comprising an amine compound (IV) as an essential component.

49. The curable composition according to claim 48, wherein an amino group contained in the amine compound (IV) is a primary amine.

50. The curable composition according to claim 48 or 49, wherein the amine compound is a silane coupling agent.

51. The curable composition according to any one of claims 32 to 50, comprising a polyether polymer having at least one crosslinkable silyl group represented by the general formula (1):



wherein each of  $\text{R}^1$  and  $\text{R}^2$  represents an alkyl group containing 1 to 20 carbon atoms, an aryl group containing 6 to 20 carbon atoms, an aralkyl group containing 7 to 20 carbon atoms, or a triorganosiloxy group represented by  $(\text{R}')_3\text{SiO}-$ , wherein  $\text{R}'$  represents a monovalent hydrocarbon group containing 1 to 20 carbon atoms, and three  $\text{R}'$ 's may be identical to or different

from one another, and when two or more  $R^1$ s or  $R^2$ s exist, these may be identical to or different from one another; Y represents a hydroxyl group or a hydrolyzable group, and when two or more Ys exist, these may be identical to or different from one another; and a represents 0, 1, 2, or 3, b represents 0, 1, or 2, and m represents an integer between 0 and 19, which satisfies  $a + mb \geq 1$ .

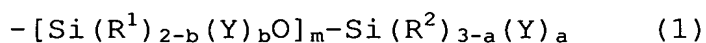
52. The curable composition according to claims 32 to 51, wherein the compound (II) having a methyl ester group other than the compound (I) is a dimethyl ester of dicarboxylic acid.

53. A sealant, wherein the curable composition according to any one of claims 32 to 52 is used.

54. A liquid gasket, wherein the curable composition according to any one of claims 32 to 52 is used.

55. An adhesive, wherein the curable composition according to any one of claims 32 to 52 is used.

56. A curable composition comprising, as an essential component, (I) a vinyl polymer having at least one crosslinkable silyl group, comprising a compound having a methyl ester group, the crosslinkable silyl group represented by the general formula (1):



wherein each of  $R^1$  and  $R^2$  represents an alkyl group containing 1 to 20 carbon atoms, an aryl group containing 6 to 20 carbon atoms, an aralkyl group containing 7 to 20 carbon atoms, or a triorganosiloxy group represented by  $(R')_3SiO-$ , wherein  $R'$  represents a monovalent hydrocarbon group containing 1 to 20 carbon atoms, and three  $R'$ 's may be identical to or different from one another, and when two or more  $R^1$ 's or  $R^2$ 's exist, these may be identical to or different from one another;  $Y$  represents a hydroxyl group or a hydrolyzable group, and when two or more  $Y$ 's exist, these may be identical to or different from one another; and  $a$  represents 0, 1, 2, or 3,  $b$  represents 0, 1, or 2, and  $m$  represents an integer between 0 and 19, which satisfies  $a + mb \geq 1$ .